

## AN ANALYSIS OF FARMERS' KNOWLEDGE FOR RAINFED GROUNDNUT PRODUCTION TECHNOLOGY

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### INTRODUCTION

India is a paradise of oilseed crops. The country has distinction of having around 19 per cent of the total world's oilseeds area and produces 10 per cent of the world oilseeds production. However, the average yield of oilseed in the country is about 900 kg/ha as against world average 1275 kg/ha and of 2500 kg/ha in USA (Damodaram and Hedge, 1999).

Gujarat is one of the leading oilseed producing states of the country. Groundnut alone contributes as high as 76 per cent of country's total oilseed production, out of which a lion share of comes from Saurashtra region of the state with low productivity.

Development and acceptance of modern agricultural technologies is getting the prime attention for boosting up crop production. It is generally observed that farmers do not adopt complete set of modern technology that in turn results into low productivity. Extent of adoption of improved technologies is also observed to be very low, as evidenced from some of the past studies. The knowledge on modern technologies is a pre-requisite for successful adoption. In

order to increase the level of adoption farmers shall be made aware of the latest technical know-how. To start with, it is imperative to examine the knowledge status of farmers towards rain fed groundnut production technology with the following objectives:

1. To study the knowledge status of the farmers towards groundnut production technology.
2. To determine the relationship between knowledge and selected independent variables.

### METHODOLOGY

The study was conducted in South Saurashtra zone of Gujarat during year 1999. This zone consisted of 24 talukas. Out of these, 12 talukas were selected randomly for the study. Two villages from each taluka were selected. In all, 256 respondents were selected by using proportionate random sampling technique. The respondents were personally interviewed with the help of a structured interview schedule.

The dependent variable knowledge was operationalised as the ability to recall the

**Table 1: Distribution of the respondents according to their knowledge status**

Sr. No.	Status of Knowledge	Frequency	Percentage
1.	Low	42	16.41
2.	Medium	179	69.42
3.	High	35	13.67
X = 22.38		SD = 4.29	

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rain fed groundnut production technologies. To measure the knowledge level of the respondents a schedule was developed for the study after consulting the experts in the concerned field. This schedule consists of 35 items. The possible score of a respondent may be varying from 0 to 35. Based on the score on knowledge items the respondents

were grouped in to three categories namely; low, medium and high by using mean and standard deviation. However, knowledge about each selected item was also analyzed on per cent basis. The Pearson's correlation co-efficient was used to determine the relationship of knowledge with selected eight independent variables. They were age,

**Table 2: Item analysis of respondents' knowledge on rain fed groundnut production technology**

Sr. No.	Knowledge items	Knowledge Level	
		Frequency	Per cent
<b>n=256</b>			
1.	Tillage	256	100
2.	Improved varieties	256	100
3.	Optimum seed rate	205	80
4.	Chemical for seed treatment	128	50
5.	Quantity of fungicide for treating 1 kg seed	90	35
6.	Disease prevented by seed treatment	90	35
7.	Recommended spacing	210	82
8.	Sowing time	256	100
9.	Varieties for early and late sowing	251	98
10.	Dosage of FYM	156	61
11.	Dosage of chemical fertilizers	166	65
12.	Fertilizers used during standing crop	230	90
13.	Time of flowering	256	100
14.	Time of peg formation	256	100
15.	Period of weed free condition	172	67
16.	Weedicides used for weed control	25	10
17.	Dosage of weedicides	7	3
18.	Important disease/pests of groundnut	205	80
19.	Type of damage due to Jassid, Aphid & Leaf miner	154	60
20.	Dosage of control to Jassid, Aphid & leafminer	77	30
21.	Quantity of water required for spraying insecticides/pesticides	128	50
22.	Appropriate time to control white grubs	000	00
23.	Type of damage due to rust	128	50
24.	Knowledge about important fungicides	115	45
25.	Fungicides recommended to control Tikka	90	35
26.	Fungicides recommended to control Rust	77	30
27.	Fungicides recommended to control Root-root	77	30
28.	Plant protection measures to control leaf spot	95	37
29.	Disease prevented by crop rotation	90	35
30.	Intercrops recommended in groundnut	256	100
31.	In case of unfavourable monsoon which alternate crops can be grown	245	96
32.	Crops beneficial as compared to groundnut	205	80
33.	Sprinkler irrigation system is suitable for groundnut	128	50
34.	Drip irrigation system is suitable for groundnut	128	50
35.	Critical stages which affect the groundnut production	251	98

education, income, size of land holding, extension participation, risk preference, adoption and yield gap.

## RESULTS AND DISCUSSION

### Status of Farmers knowledge towards groundnut production technologies

It is evident from Table 1 that majority (69.92 per cent) of respondents had medium status whereas, 13.67 per cent and 16.41 per cent had high and low knowledge, respectively.

### Analysis of Knowledge items

A look of data (Table 2) indicated that all the respondents had knowledge in respect of tillage; improved varieties; times of sowing, flowering and peg formation; and intercrops recommended in groundnut. However, knowledge on varieties for early and late sowing; alternate crops which can be grown in case of unfavorable monsoon; critical stages of groundnut; and use of fertilizers in standing crop were possessed by 90 to 98 per cent of the respondents.

There were less than 10 per cent farmers who know dosage of weedicides. Thus, it is clear from the analysis of the knowledge items that all the respondents having knowledge on the few technologies because of the effectiveness and low cost characteristics of these technologies.

However, in case of low level of knowledge, this might be due to the fact that the traditional knowledge of the farmers and modern technologies both are quite different. The other reason may be that the application of these technologies required more skills. Hence knowledge on these technologies was found very poor. However, knowledge on white grubs was not possessed by any of the respondents, this may be due to the fact that the attack of white grubs is not occur in the region.

### Factor Analysis

The determination factors affecting the relationship between knowledge and independent variables are presented in Table 3. The data revealed that age and risk preference did not affect the knowledge status of the farmers significantly. This might be due to the facts that groundnut is being cultivated in the region since generations; hence respondents possessed enough knowledge irrespective of their age. In this region of the state droughts are very common, so that the risk bearing capacity have also been developed.

The variables namely; education, income, size of land holding and extension participation had shown their positive and significant relationship with the knowledge. Adoption and yield gap had highly significant

**Table 3: Correlation coefficient between the knowledge and selected independent variables**

Sr. No.	Independent variables	'r' Value
1.	Age	0.100 NS
2.	Education	0.141*
3.	Income	0.252*
4.	Size of land holding	0.213*
5.	Extension participation	0.160*
6.	Risk-preference	0.052 NS
7.	Adoption	0.686**
8.	Yield gap	-0.698**

NS=Non significant

\*=Significant at 0.05 level

\*\* = Significant at 0.01 level

effect on knowledge, which clearly indicated, that higher level of knowledge would decrease the yield gap in groundnut production and increase the adoption of groundnut production technology.

### **CONCLUSION**

The study revealed that majority of the respondents belonged to medium knowledge. The respondents had very poor knowledge on plant protection and chemical weed control. Where as, all the respondents had knowledge on tillage, improved varieties, sowing time, time of flowering and peg formation and intercrops recommended

for groundnut. More over, the important variables namely education, income, size of land holding, extension participation, adoption and yield gap were found as determinant factors associated with knowledge status of the respondents towards rain fed groundnut production technology.

### **REFERENCE**

Damodaran, T. and Hedge, D. M. 1999. Oilseed situation. A statistical Compendium. Directorate of Oilseeds Research (ICAR), Rajendranagar, Hyderabad